

RAILWAY AGE REPRINT SERIES, No. 9.
MCCURDY (S. LER.)

A Few Things That May Add to the
Convenience of Railroad
Surgeons,

WITH WHICH IS PRINTED AN ARTICLE ON

Bloodless Amputation at the Hip Joint
at One Sitting, and with
One Needle.

BY

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REPRINTED FROM

THE RAILWAY AGE AND NORTHWESTERN RAILROADER,
CHICAGO,

**A Few Things That May Add to the Convenience of
Railroad Surgeons.**

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In order that the work of a railroad surgeon may be done with the least possible labor to himself and the most advantage to his patient, I have constructed a railroad stretcher, a flap retractor, a lounge and operating table, a fracture bed, and an ambulance car.

The stretcher, shown in Fig. 1, resembles other stretchers, except that it is narrower and has four

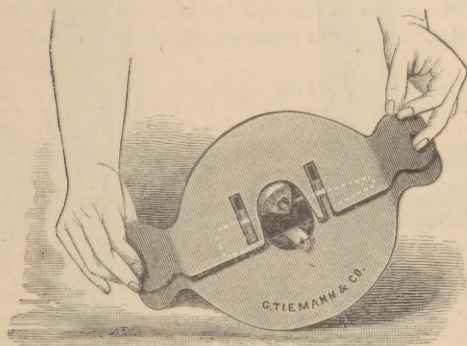


FIG. 2. FLAP RETRACTOR.

handles at the corners, and a drop handle in the center at either side. It is composed of two side bars 6 feet long, jointed to two cross bars, with another joint in the middle of the cross bars which, when folded, allows the side bars to come together. When closed it is secured by straps and makes a compact bundle light enough for one man to carry for any ordinary distance. To obviate uncoupling of coaches you may pass this stretcher through the window just as conveniently as through the door, and to make the pa-



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tient rest comfortably in the coach remove the back of one seat near the middle of the coach and place the patient on three cushions, which is the most comfortable position to be secured in a railroad train. The advantage of the stretcher over the one now in use is

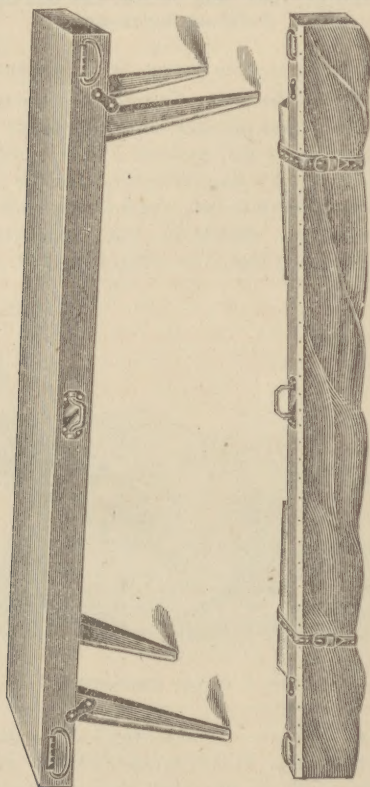


FIG. 1. RAILWAY STRETCHER.

apparent. It is 6 feet long, 22 inches wide, and weighs about 18 pounds.

Second, the flap retractor Fig. 2. In performing over one hundred amputations one of the most unsatisfactory steps in operating has been to saw the bones off without doing great damage to the soft parts with the saw.

The three-tailed bandage, so long in use for retracting the muscles and soft parts back to where the cut is to be made through the bones, has in my hands at least served a very imperfect purpose. To do the very best it was always impossible for me to keep the muscles or the assistant's fingers away from the saw's teeth, or from preventing the saw from catching in and tearing the veteran muslin retractor. The retractor about to be described was made because I had use for it, and is presented because other surgeons may have found the same drawback to the muslin retractor, and may also find an equal need for something better. In amputating through the femur or humerus the blades can be closed tightly around the bone and all soft tissues drawn back to where the bone is to be sawed off, with ease. As can be seen, the blades are provided with handles, which are bent back so as to throw the assistant's fingers back of a line with the saw. When not in use the blades can be taken apart and kept in an aseptic condition.

Fig. 3 represents a lounge and operating table

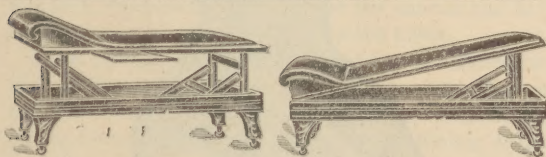


FIG. 3. LOUNGE AND OPERATING TABLE.

which, when closed, answers the purpose of any ordinary lounge found in a physician's office. It at the same time can be converted into an operating table of any desirable height either with the patient on or off. It can also be converted into a simple inclined plane of any angle. This inclination can be secured from either end and will be more thoroughly appreciated in resuscitating patients from ether or chloroform narcosis. The lounge is provided with stirrups for the feet when it is desired to use it for gynecological operations or lithotomy. The half elevation can also be had with the projection either toward the head or toward the foot. This is desirable when the operator desires to

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sit down. The extreme height of the table is 33 inches and width 2 feet. In the Columbus Medical Journal during 1885 there appeared an article on "A new fracture bed," with a description of the bed at that time. Since that date the bed has been greatly improved, but

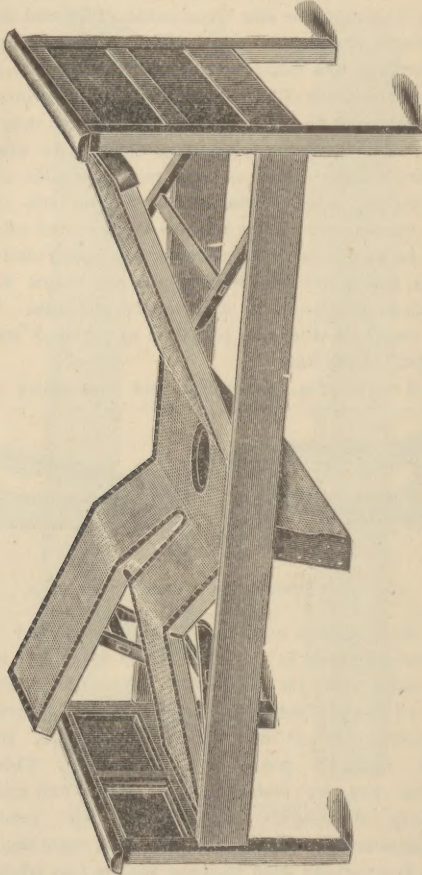


FIG. 4. SURGICAL BED.

those improvements have never been published, except in a treatise for the treatment of fractures by Dr. August Schreiber, published in Berne, Switzerland.

The bed (Fig. 4.) may be described briefly as follows: 1. Head incline. 2. Lower extremity double incline planes. 3. The drop-trap.

The third feature, deserving accurate description, is the "drop-trap," constructed with the object of doing away with the unhandy bed pan. This trap is composed of a double frame filled in with coarse strips of heavy cloth woven in every direction, so as to give strength and endurance and at the same time add lightness to the structure. This is upholstered with the best of heavy canvas, the same as used on the adjustable frames, besides being reinforced with good springs and cushion material, after the style of cushioned furniture. The drop-trap extends transversely across the middle of the bed, closely fitting with the outside frame, and is attached behind with hinges to the cross brace, so that when it is lowered for use it turns out of harm's way toward the foot of the bed where it is retained by means of two hooks. Occupying as it does the middle of the bed where the weight of the body is most dependent, it substantially supports the canvas and furnishes a very pleasant cushion for the nates.

Since publishing a description of an ambulance car in *THE RAILWAY AGE* in 1891, showing a car 30 feet long, with one Pullman bunk and a large room at one end to be used for an operating room, a dining room, a sitting room, or for the remains when the car is used for funeral purposes, and affording other advantages proportionately smaller, I have consulted a number of railroad officials, and upon their advice have changed the original plan so as to make the car the size of a standard Pullman car or day coach.

The observation room A, as shown in Fig. 5, to be used for a sitting room, a dining room, etc., is in the rear end of the car, and has four windows on either side. It is to contain a number of chairs and a folding table to be used for office work or when necessary for a dining table. B. C and D show two ordinary Pullman bunks with a sleeping capacity of eight. E shows a state room containing an ordinary Pullman bunk next to the window and a couch G next to corridor, and off from which F is a water closet and wash

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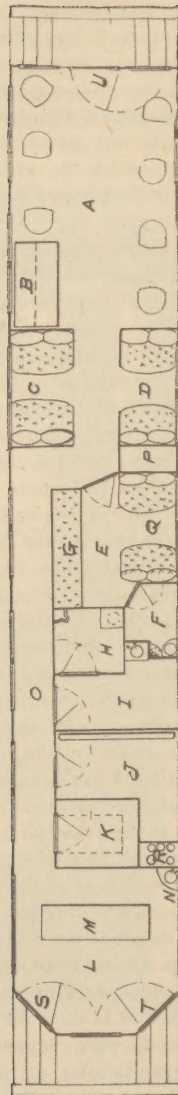


FIG. 5. 'AMBULANCE CAR—FLOOR PLAN.

room. Leading from corridor O is a door into wash-room I and from I to a door to the water-closet, H. J represents the kitchen, which contains a range for cooking and for the purpose of heating water for operations and for sterilizing instruments and dressings. J also contains a sleeping bunk for a porter. K represents a closet for the storage of surgical instruments, stretchers and general storage. L represents an operating room. This room contains an operating table, M, made narrow enough to be wheeled through the corridor O to the Pullman bunk. The patient can be lifted over the Pullman bunk into the state-room, or on the bed arranged at C. N represents a wash-bowl with hot and cold water, to be used during operation. Two corner doors, S and T, are made so that a stretcher containing an injured or sick person, or a coffin, may be taken into the car without uncoupling the car. This has been a great difficulty I have experienced at wrecks in transporting the injured. To get a patient into a car in the center of a train we are compelled to uncouple and separate the cars or remove the patient from the stretcher and carry him in the arms of three or four men up the steps, over the platform and through the door, always a difficult operation. Every railroad surgeon has tried it and knows from grievous experience the truth of this statement. After all this labor by the physician and his attendants and suffering on the part of the patient we encounter another obstacle, viz: the securing of a place for the patient to rest. To place him on the stretcher again and place this on cushions would require the removal of one seat back, which would necessitate the using of three seats in the coach. At the end of the journey all these difficulties would again be encountered. While the labor of four or six men required to handle the patient is considerable, it is not to be compared with the untold suffering to which the patient himself is subjected, even in the most careful manipulation. With corner doors and a stretcher that will pass through them, all this trouble can be obviated. Doors S, T and U are made three feet wide, which will admit any size stretcher. When it is desired to use the car for funeral purposes,

which, to my mind, is one of its principal uses, the remains can be placed at M, and those desiring to view them can pass in at S and out at T without disturbing the privacy of the mourners, who are in the other end of the car. The car will give sleeping accommodations for thirteen and a porter comfortably, and has every convenience of any private car, with every appliance of the most modern and improved surgical operating room.

The hospital system has been adopted by almost all of the large railroad systems of the west. They have recognized the economy of the hospital system, and have shown greater energy in this matter than the eastern railroads. With patients concentrated at one point in large hospitals, managed entirely by the railroad company, the expense, which is now enormous when the patients are taken care of, one here and one there, with special nurses day and night, is reduced to a minimum. In short, the hospital system is made more possible by use of a car similar to the one described above.

Bloodless Amputation at the Hip Joint at One Sitting and with One Needle.

BY S. L. M'CURDY, M. D., DENNISON, OHIO.

Those desiring to make a study of the various methods of amputation at the hip joint are referred to the articles of Senn (1), Parham (2), Murdoch (3).

The method herewith described has some advantages and has controlled hemorrhage perfectly, both in amputations at the shoulder and hip. An objection is argued that it does not control hemorrhage from some branches of the internal iliac artery. While it is true that some hemorrhage may result from practicing this method it cannot be in sufficient quantity to

(1). Bloodless amputations at the hip joint by a new method, by N. Senn, M. D., Chicago, Ill.—Chicago Clinical Review, February, 1893.

(2). Amputation at the hip joint by Wyeth's bloodless method, by F. W. Parham, M. D., New Orleans, La.—Journal American Medical association, Dec. 23, 1893.

(3). Contribution to the study of Amputations at the hip joint, by J. B. Murdoch, M. D., Pittsburgh, Pa.—Annals of Surgery, January, 1893.

cause alarm. The merits of the operation will not be considered, for surgeons who have made a study of the papers above referred to can form their own conclusion as to the method they desire to use.

The operation on hip joint amputations is performed as follows, Fig. 1:

First draw a line from the most prominent point of

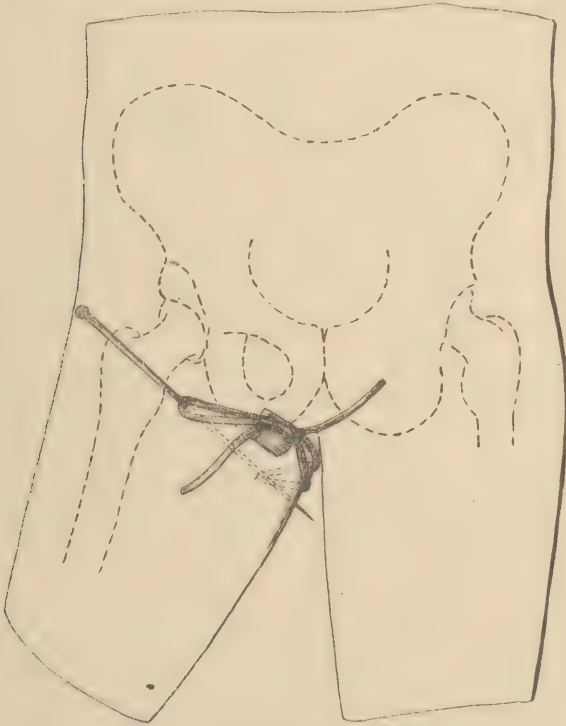


Fig. 1.

the greater trochanter to the perineum. The needle is entered on this line at a point just internal to the femur, and is passed directly through the thigh so as to make its exit just below the *tuber ischii*. Passed through at this point the needle will be external to all the important bloodvessels, and the only hemorrhage

possible will be from the smaller vessels upon the external aspect of the thigh. A figure of eight is now made by throwing a round rubber tourniquet around the projecting ends of the needle, over the internal aspect of the thigh, sufficiently tight to destroy femoral pulsation beyond the tourniquet. The flaps are now made, which is followed by disarticulation. After ligating the blood vessels, the cord and needle are re-

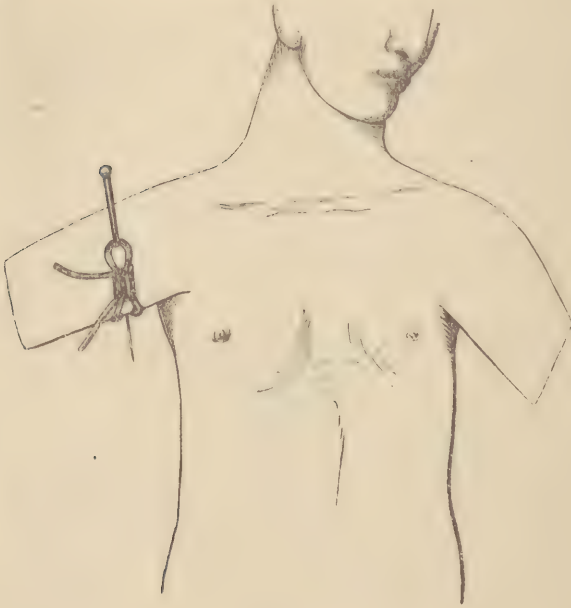


Fig. 2.

moved and the stump is ready for final dressing. The point of the needle should be guarded, as Wyeth suggests, with a cork.

The second cut, Fig. 2, is prepared in view of carrying out the same idea of a bloodless amputation at the shoulder joint. The steps in such an operation are at once suggested to the surgeon, after having studied the rules laid down for the hip operation.

